



SEQUENCE LISTING

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MALLET, Jacques  
RAVASSARD, Philippe

<120> POLYPEPTIDES OF THE "BASIC-HELIX-LOOP-HELIX" bHLH  
FAMILY, CORRESPONDING NUCLEIC ACID SEQUENCES

<130> P26,952 USA

<140> US 09/595,947

<141> 2000-06-16

<150> FR96/15651

<151> 1996-12-19

<150> PCT/FR97/02368

<151> 1997-12-19

<150> US 09/331,356

<151> 1999-07-12

<160> 40

<170> PatentIn Ver. 3.1

<210> 1

<211> 1460

<212> DNA

<213> Rattus norvegicus

<400> 1

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cgattagcag ctccagaagtc cctctgggtc tcaccactgc acagaggccg aggaccccct 180  
ccgagcttct ttgctgcctc cagacgcaat ttactccagg cgagggcgcc tgcagctcag 240  
caaaacttcg aagcgagcag aggggttcag ctatccaccg ctgcttgact ctgaccaccc 300  
gcagctctct gttcttttga gcccggagta actaggtaac atttaggaac ctccaaaggg 360  
tagaagaggg gagtgggtgg gcgtactcta gtcccgctg gagtgacctc taagtcagag 420  
actgtcacac cccctttcca ttttttcca acctcaggat ggcgcctcat cccttgatg 480  
cgccaccat ccaagtgtcc caagagacc agcaaccctt tcccgagacc tcggaccacg 540  
aagtgtcag ttccaattcc accccaccta gcccactct cgtaccgagg gactgtctcg 600  
aagcagaagc aggtgactgc cgaggacat cgaggaagct ccgtgcgcgg cgcgaggggc 660  
gcaacaggcc caagagcgag ttggcactga gcaagcagcg acgaagccgg cgcaagaagg 720  
ccaacgaccg ggagcgcaac cgcatgcaca accttaactc cgcgctggat gcgctgcgcg 780  
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 aaagggaggg agtcagagct gtctgaaatg gaaggtagtg gaggcactcg agcatctcgc 1200  
 cccttctggc ttctattagt caggtccctg atttaaccag gattcgcaca gttccttgct 1260  
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<210> 2  
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<220>  
 <223> Description of Artificial Sequence: PCR Primer

<220>  
 <223> n = Inosine

<400> 2  
 aatkghmgng agcgndkcg cryg 24

<210> 3  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: PCR Primers

<400> 3  
 ggcsrdtytc agggtsybga yctt 24

<210> 4  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: PCR Primers

<400> 4  
 aaccttaact ccgctgga tgcgc 25

<210> 5  
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<220>  
 <223> Description of Artificial Sequence: PCR Primers

<400> 5  
 cgcggtgtcc tgcccacc 18

<210> 6  
 <211> 6  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: E box

<400> 6  
 caggtg 6

<210> 7  
 <211> 6  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Mutated E box

<400> 7  
 tccgtg 6

<210> 8  
 <211> 214  
 <212> PRT  
 <213> Rattus norvegicus

<400> 8  
 Met Ala Pro His Pro Leu Asp Ala Pro Thr Ile Gln Val Ser Gln Glu  
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 Thr Gln Gln Pro Phe Pro Gly Ala Ser Asp His Glu Val Leu Ser Ser  
 20 25 30  
 Asn Ser Thr Pro Pro Ser Pro Thr Leu Val Pro Arg Asp Cys Ser Glu  
 35 40 45  
 Ala Glu Ala Gly Asp Cys Arg Gly Thr Ser Arg Lys Leu Arg Ala Arg  
 50 55 60  
 Arg Gly Gly Arg Asn Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln  
 65 70 75 80  
 Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met  
 85 90 95  
 His Asn Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr  
 100 105 110  
 Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala  
 115 120 125  
 His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His  
 130 135 140  
 Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro Cys Gly Glu Leu Gly Ser  
 145 150 155 160  
 Pro Gly Gly Gly Ser Ser Gly Asp Trp Gly Ser Ile Tyr Ser Pro Val  
 165 170 175  
 Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala Ser Leu Glu Glu Phe Pro  
 180 185 190  
 Gly Leu Gln Val Pro Ser Ser Pro Ser Cys Leu Leu Pro Gly Thr Leu  
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195

200

205

Val Phe Ser Asp Phe Leu  
210

<210> 9  
<211> 1330  
<212> DNA  
<213> Homo sapiens

<400> 9  
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tgctcatcgc tctctattct tttgcccgg tagaaaggta atatttgag gccttcgagg 180  
gacgggcagg ggaaagaggg atcctctgac ccagcggggg ctgggaggat ggctgttttt 240  
gttttttccc acctagcctc ggaatcgcg actgcgccgt gacggactca aacttaccct 300  
tccctctgac cccgccgtag gatgacgcct caaccctcgg gtgcgcccac tgtccaagt 360  
acccgtgaga cggagcggtc cttcccaga gcctcggaag acgaagtgc ctgccccacg 420  
tccgccccgc ccagccccac tcgcacaccg gggaaactgcg cagaggcgga agagggaggc 480  
tgccgagggg ccccgaggaa gctccgggca cggcgcgggg gacgcagccg gcctaagagc 540  
gagttggcac tgagcaagca gcgacggagt cggcgaaaga aggccaacga ccgcgagcgc 600  
aatcgaatgc acgacctcaa ctcggcactg gacgccctgc gcggtgtcct gcccaccttc 660  
ccagacgacg cgaagctcac caagatcgag acgctgcgct tcgcccacaa ctacatctgg 720  
gcgctgactc aaacgctgcg catagcggac cacagcttgt acgcgctgga gccgccggcg 780  
ccgcactgcg gggagctggg cagcccaggc ggtccccccg gggactgggg gtccctctac 840  
tccccagtct cccaggctgg cagcctgagt cccgccgcgt cgctggagga gcgacccggg 900  
ctgctggggg ccacctcttc cgctgcttg agcccaggca gtctggcttt ctgagatttt 960  
ctgtgaaagg acctgtctgt cgctgggctg tgggtgctaa gggtaagggg gagggaggga 1020  
gccgggagcc gtagagggtg gccgacggcg gcggccctca aaagcacttg ttccttctgc 1080  
ttctccctag ctgacctctg gccggcccag gcctccacgg gggcggtagg ctgggttcat 1140  
tccccggccc tccgagccgc gccaacgcac gcaacccttg ctgctgcccg cgcgaggtgg 1200  
gcattgcaaa gtgcgctcat ttaggcctc ctctctgcca ccacccata atccattca 1260  
aagaatacta gaatggtagc actaccggc cggagccgcc caccgtcttg ggtcgcccta 1320  
ccctcactca 1330

<210> 10  
<211> 214  
<212> PRT  
<213> Homo sapiens

<400> 10  
Met Thr Pro Gln Pro Ser Gly Ala Pro Thr Val Gln Val Thr Arg Glu  
1 5 10 15

Thr Glu Arg Ser Phe Pro Arg Ala Ser Glu Asp Glu Val Thr Cys Pro  
Page 4



<220>  
 <223> n = a, c, t, or g

<400> 13  
 atcgttgaga ctcgtaccag cagagtcacg agagagacta cacggtactg gnnnnnnnnn 60

<210> 14  
 <211> 20  
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<220>  
 <223> Description of Artificial Sequence: PCR Primer

<400> 14  
 agacgacgcg aagctcacca 20

<210> 15  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: PCR Primer

<400> 15  
 gtcaccaag atcgagacgc tgcg 24

<210> 16  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: PCR Primer

<400> 16  
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<210> 17  
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<220>  
 <223> Description of Artificial Sequence: PCR Primer

<400> 17  
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<210> 18  
 <211> 19  
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 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: PCR Primer

<400> 18  
 ctgccagcct gggagactg 19

<210> 19  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer  
  
<400> 19  
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<210> 20  
<211> 25  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: PCR Primer  
  
<400> 20  
gatgtcacgc agagtgcgca ggtag 25

<210> 21  
<211> 23  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer  
  
<400> 21  
agcctgggag actggggagt aga 23

<210> 22  
<211> 24  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: PCR Primer  
  
<400> 22  
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<210> 23  
<211> 22  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: PCR Primer  
  
<400> 23  
cgctatgcgc agcgtttgag tc 22

<210> 24  
<211> 25  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: PCR Primer  
  
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cctcggaccc cattctctct tcttt 25

<210> 25

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer

<400> 25

tgagtgaggg tagggcgacc caag 24

<210> 26

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probe

<400> 26

aggaagctcc gggca 15

<210> 27

<211> 1381

<212> RNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probe

<400> 27

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gguagggcgga cccaagacgg ugggcggcuc cggccgggua gugcuaccu ucuaguauuc 120  
uuugaauuggg auuauggggu gguggcagag aggaggccua aaaugagcgc acuuugcaau 180  
gcccacuucg cgcgggcagc agcaaggguu gcgugcguug gcgcggcucg gagggccggg 240  
gaaugaaccc agccuaccgc ccccguggag gccugggccg gccagggguc agcuagggag 300  
aagcagaagg ascaagugcu uuugagggcc gccscgcucg gccaccucuc acggcucccg 360  
gcucccuccc ucucccuuac ccuuagcacc cacagcccag cgacagacag guccuuucac 420  
agaaaaucug agaaagccag acugccuggg cucaagcagg cggaagaggu ggcccccagc 480  
agccccggguc gcuccuccag cgacgcggcg ggacucaggc ugccagccug ggagacuggg 540  
gaguagaggg acccccaguc cccgggggga ccgccugggc ugcccagcuc cccgcagugc 600  
ggcgccggcg gcuccagcgc guacaagcug ugguccgcua ugcgcagcgu uugagucagc 660  
gcccagaugu aguugugggc gaagcgcagc gucucgaucu uggugagcuu cgcgucgucu 720  
gggaaggugg gcaggacacc gcgcagggcg uccagugccg aguugagguc gugcauucga 780  
uugcgcucgc ggucguuggc cuucuuucgc cgacuccguc gcugcuugcu cagugccaac 840  
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cagccucccu cuuccgccuc ugcgcaguuc cccggugugc gaguggggcu gggcggggcg 960  
gacguggggc agguacacuuc gucuuccgag gcucugggga aggaccgcuc cgucucacgg 1020



ucacuuggac agugggcgca cccgaggguu gaggcgucau ccuacggcgg ggucagaggg 1080  
 aaggguaagu uugaguccgu cacggcgag uccgcgauuc cgaggcuagg ugggaaaaaa 1140  
 caaaaacagc cauccuccca gccccgcug ggucagagga ucccucuuc cccugcccg 1200  
 cccucgaagg ccuccaaaaua uuaccuuucu accggcgcaa aagaauagag agcgaugagc 1260  
 agcgagggcc guggggagcu cagcgggcuu cuggucgcca aguucagcug agcugcaggc 1320  
 gcccccgccu gggaguugcc ccagccbcaa aggagaaaag aagagagaau gggguccgag 1380  
 g 1381

<210> 28  
 <211> 1427  
 <212> RNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Probe

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 uucacuagug auuccucgga ccccauucuc ucuucuuuuc uccuuugggg cuggggcaac 120  
 ucccaggcgg gggcgccugc agcucagcug aacuuggcga ccagaagccc gcugagcucc 180  
 ccacggcccu cgcugcucua cgcucucuau ucuuuugcgc cgguaaaaag guaaauuuug 240  
 gaggccuucg agggacgggc aggggaaaga gggauccucu gaccagcgg gggcugggag 300  
 gauggcuguu uuuguuuuuu cccaccuagc cucggaucg cggacugcgc cgugacggac 360  
 ucaaacuac ccuucccucu gaccccgccg uaggaugacg ccucaacccu cgggugcgcc 420  
 cacuguccaa gugacccgug agacggagcg guccuucccc agagccucgg aagacgaagu 480  
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 ccugcccacc uucccagacg acgcgaagcu caccaagauc gagacgcugc gcuucgccc 780  
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 ccgcgcgaag ugggcauugc aaagugcgcu cauuuuaggc cuccucucug ccaccacccc 1320

auaaucccau ucaaagaaua cuagaauugu agcacuaccc ggccggagcc gcccaccguc 1380  
uugggucgcc cuaccucac uaaaucgaa uucccgcggc cgccaug 1427

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<212> DNA  
<213> Rattus norvegicus

<400> 29  
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ttcgccctca actacatttg ggcactgact cagacgctgc gcatagcgga ccacagcttc 120  
tacggccccg agccccctgt gccctgtggg gagctgggaa gcccgggagg gggctccagc 180  
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tcattggagg agttccctgg cctgcacgtg cccagctccc catcctatct gctcccgggc 300  
accctggtgt tctcagactt cttgtgaagg gcccaaacag gccctgggag gtgggcgctg 360  
gcagaaaggg agggagtcag agctgtctga aatggaagg agtgaggca ctcgagcatc 420  
tcgccccctt tggctttcat tagtcaggct cctgatttaa ccaggattcg cacagtccct 480  
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tcccatactt cctggtgact ccgccctctt tcaaactctgc gggcctccaa ccaccgcttt 660  
ctccagagtg acctaattca gtgttgctgc ttacctcact ggctcttggt ccata 715

<210> 30  
<211> 108  
<212> PRT  
<213> Rattus norvegicus

<400> 30

Arg Gly Val Leu Pro Thr Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile  
1 5 10 15  
Glu Thr Leu Arg Phe Ala Leu Asn Tyr Ile Trp Ala Leu Thr Gln Thr  
20 25 30  
Leu Arg Ile Ala Asp His Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro  
35 40 45  
Cys Gly Glu Leu Gly Ser Pro Gly Gly Gly Ser Ser Gly Asp Trp Gly  
50 55 60  
Ser Ile Tyr Ser Pro Val Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala  
65 70 75 80  
Ser Leu Glu Glu Phe Pro Gly Leu Gln Val Pro Ser Ser Pro Ser Cys  
85 90 95  
Leu Leu Pro Gly Thr Leu Val Phe Ser Asp Phe Leu  
100 105

<210> 31  
 <211> 60  
 <212> PRT  
 <213> Rattus norvegicus

<400> 31

Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met His Asn  
 1 5 10 15

Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr Phe Pro  
 20 25 30

Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala His Asn  
 35 40 45

Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala  
 50 55 60

<210> 32  
 <211> 60  
 <212> PRT  
 <213> Mus musculus

<400> 32

Gln Arg Arg Leu Ala Ala Asn Ala Arg Glu Arg Arg Arg Met His Gly  
 1 5 10 15

Leu Asn His Ala Phe Asp Gln Leu Arg Asn Val Ile Pro Ser Phe Asn  
 20 25 30

Asn Asp Lys Lys Leu Ser Lys Tyr Glu Thr Leu Gln Met Ala Gln Ile  
 35 40 45

Tyr Ile Asn Ala Leu Ser Glu Leu Leu Gln Thr Pro  
 50 55 60

<210> 33  
 <211> 60  
 <212> PRT  
 <213> Mus musculus

<400> 33

Leu Arg Arg Met Lys Ala Asn Ala Arg Glu Arg Asn Arg Met His Gly  
 1 5 10 15

Leu Asn Ala Ala Leu Asp Asn Leu Arg Lys Val Val Pro Cys Tyr Ser  
 20 25 30

Lys Thr Gln Lys Leu Ser Lys Ile Glu Thr Leu Arg Leu Ala Lys Asn  
 35 40 45

Tyr Ile Trp Ala Leu Ser Glu Ile Leu Arg Ser Gly  
 50 55 60

<210> 34  
<211> 60  
<212> PRT  
<213> Mus musculus

<400> 34

Ala Ala Val Ala Arg Arg Asn Glu Arg Glu Arg Asn Arg Val Lys Leu  
1 5 10 15

Val Asn Leu Gly Phe Ala Thr Leu Arg Glu His Val Pro Asn Gly Ala  
20 25 30

Ala Asn Lys Lys Met Ser Lys Val Glu Thr Leu Arg Ser Ala Val Gln  
35 40 45

Tyr Ile Arg Ala Leu Gln Gln Leu Leu Asp Glu His  
50 55 60

<210> 35  
<211> 237  
<212> PRT  
<213> Homo sapiens

<400> 35

Met Pro Ala Arg Leu Glu Thr Cys Ile Ser Asp Leu Asp Cys Ala Ser  
1 5 10 15

Ser Ser Gly Ser Asp Leu Ser Gly Phe Leu Thr Asp Glu Glu Asp Cys  
20 25 30

Ala Arg Leu Gln Gln Ala Ala Ser Ala Ser Gly Pro Pro Ala Pro Ala  
35 40 45

Arg Arg Ser Ala Pro Asn Ile Ser Arg Ala Ser Glu Val Pro Gly Ala  
50 55 60

Gln Asp Asp Glu Gln Glu Arg Arg Arg Arg Arg Gly Arg Thr Arg Val  
65 70 75 80

Arg Ser Glu Ala Leu Leu His Ser Leu Arg Arg Ser Arg Arg Val Lys  
85 90 95

Ala Asn Asp Arg Glu Arg Asn Arg Met His Asn Leu Asn Ala Ala Leu  
100 105 110

Asp Ala Leu Arg Ser Val Leu Pro Ser Phe Pro Asp Asp Thr Lys Leu  
115 120 125

Thr Lys Ile Glu Thr Leu Arg Phe Ala Tyr Asn Tyr Ile Trp Ala Leu  
130 135 140

Ala Glu Thr Leu Arg Leu Ala Asp Gln Gly Leu Pro Gly Gly Gly Ala  
Page 12

145                      150                      155                      160  
 Arg Glu Arg Leu Leu Pro Pro Gln Cys Val Pro Cys Leu Pro Gly Pro  
                                  165                                   170                                   175  
 Pro Ser Pro Ala Ser Asp Ala Glu Ser Trp Gly Ser Gly Ala Ala Ala  
                                  180                                   185                                   190  
 Ala Ser Pro Leu Ser Asp Pro Ser Ser Pro Ala Ala Ser Glu Asp Phe  
                                  195                                   200                                   205  
 Thr Tyr Arg Pro Gly Asp Pro Val Phe Ser Phe Pro Ser Leu Pro Lys  
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 Asp Leu Leu His Thr Thr Pro Cys Phe Ile Pro Tyr His  
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 <212> PRT  
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                                   20                                  25                                  30  
 Cys Ala Arg Leu Gln Pro Leu Ala Ser Thr Ser Gly Leu Ser Val Pro  
                                   35                                  40                                  45  
 Ala Arg Arg Ser Ala Pro Ala Leu Ser Gly Ala Ser Asn Val Pro Gly  
                                   50                                  55                                  60  
 Ala Gln Asp Glu Glu Gln Glu Arg Arg Arg Arg Gly Arg Ala Arg  
   65                                  70                                  75                                  80  
 Val Arg Ser Glu Ala Leu Leu His Ser Leu Arg Arg Ser Arg Arg Val  
                                   85                                  90                                  95  
 Lys Ala Asn Asp Arg Glu Arg Asn Arg Met His Asn Leu Asn Ala Ala  
                                   100                                  105                                  110  
 Leu Asp Ala Leu Arg Ser Val Leu Pro Ser Phe Pro Asp Asp Thr Lys  
                                   115                                  120                                  125  
 Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala Tyr Asn Tyr Ile Trp Ala  
                                   130                                  135                                  140  
 Leu Ala Glu Thr Leu Arg Leu Ala Asp Gln Gly Leu Pro Gly Gly Ser  
   145                                  150                                  155                                  160

Ala Arg Glu Arg Leu<sub>165</sub> Leu Pro Pro Gln Cys<sub>170</sub> Val Pro Cys Leu<sub>175</sub> Pro Gly

Pro Pro Ser Pro<sub>180</sub> Ala Ser Asp Thr Glu<sub>185</sub> Ser Trp Gly Ser Gly<sub>190</sub> Ala Ala

Ala Ser Pro<sub>195</sub> Cys Ala Thr Val Ala<sub>200</sub> Ser Pro Leu Ser Asp<sub>205</sub> Pro Ser Ser

Pro Ser Ala Ser Glu Asp Phe<sub>215</sub> Thr Tyr Gly Pro Gly<sub>220</sub> Asp Pro Leu Phe

Ser<sub>225</sub> Phe Pro Gly Leu Pro<sub>230</sub> Lys Asp Leu Leu His<sub>235</sub> Thr Thr Pro Cys Phe<sub>240</sub>

Ile Pro Tyr His

<210> 37  
<211> 214  
<212> PRT  
<213> Mus musculus

<400> 37

Met Ala Pro His Pro<sub>5</sub> Leu Asp Ala Leu Thr<sub>10</sub> Ile Gln Val Ser Pro Glu<sub>15</sub>

Thr Gln Gln Pro<sub>20</sub> Phe Pro Gly Ala Ser<sub>25</sub> Asp His Glu Val Leu<sub>30</sub> Ser Ser

Asn Ser Thr<sub>35</sub> Pro Pro Ser Pro Thr<sub>40</sub> Leu Ile Pro Arg Asp<sub>45</sub> Cys Ser Glu

Ala Glu Val Gly Asp Cys<sub>55</sub> Arg Gly Thr Ser Arg Lys<sub>60</sub> Leu Arg Ala Arg

Arg Gly Gly Arg Asn Arg<sub>70</sub> Pro Lys Ser Glu Leu<sub>75</sub> Ala Leu Ser Lys Gln<sub>80</sub>

Arg Arg Ser Arg Arg<sub>85</sub> Lys Lys Ala Asn Asp<sub>90</sub> Arg Glu Arg Asn Arg Met<sub>95</sub>

His Asn Leu Asn<sub>100</sub> Ser Ala Leu Asp Ala<sub>105</sub> Leu Arg Gly Val Leu<sub>110</sub> Pro Thr

Phe Pro Asp<sub>115</sub> Asp Ala Lys Leu Thr<sub>120</sub> Lys Ile Glu Thr Leu<sub>125</sub> Arg Phe Ala

His Asn Tyr Ile Trp Ala Leu<sub>135</sub> Thr Gln Thr Leu Arg<sub>140</sub> Ile Ala Asp His

Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro Cys Gly Glu Leu Gly Ser



Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala Ser Leu Glu Glu Phe Pro  
180 185 190

Gly Leu Gln Val Pro Ser Ser Pro Ser Cys Leu Leu Pro Gly Thr Leu  
195 200 205

Val Phe Ser Asp Phe Leu  
210

<210> 39  
<211> 214  
<212> PRT  
<213> Homo sapiens

<400> 39

Met Thr Pro Gln Pro Ser Gly Ala Pro Thr Val Gln Val Thr Arg Glu  
1 5 10 15

Thr Glu Arg Ser Phe Pro Arg Ala Ser Glu Asp Glu Val Thr Cys Pro  
20 25 30

Thr Ser Ala Pro Pro Ser Pro Thr Arg Thr Pro Gly Asn Cys Ala Glu  
35 40 45

Ala Glu Glu Gly Gly Cys Arg Gly Ala Pro Arg Lys Leu Arg Ala Arg  
50 55 60

Arg Gly Gly Arg Ser Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln  
65 70 75 80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met  
85 90 95

His Asp Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr  
100 105 110

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala  
115 120 125

His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His  
130 135 140

Ser Leu Tyr Ala Leu Glu Pro Pro Ala Pro His Cys Gly Glu Leu Gly  
145 150 155 160

Ser Pro Gly Gly Pro Pro Gly Asp Trp Gly Ser Leu Tyr Ser Pro Val  
165 170 175

Ser Gln Ala Gly Ser Leu Ser Pro Ala Ala Ser Leu Glu Glu Arg Pro  
180 185 190

Gly Leu Leu Gly Ala Thr Ser Ser Ala Cys Leu Ser Pro Gly Ser Leu  
Page 16



195

200

205

Ala Phe Ser Asp Phe Leu  
210

<210> 40  
<211> 263  
<212> PRT  
<213> Mus musculus

<400> 40

Met Phe Val Lys Ser Glu Thr Leu Glu Leu Lys Glu Glu Glu Glu Val  
1 5 10 15

Leu Met Leu Leu Gly Ser Ala Ser Pro Ala Ser Ala Thr Leu Thr Pro  
20 25 30

Met Ser Ser Ser Ala Asp Glu Glu Glu Asp Glu Glu Leu Arg Arg Pro  
35 40 45

Gly Ser Ala Arg Gly Gln Arg Gly Ala Glu Ala Glu Gln Gly Val Gln  
50 55 60

Gly Ser Pro Ala Ser Gly Ala Gly Gly Cys Arg Pro Gly Arg Leu Leu  
65 70 75 80

Gly Leu Met His Glu Cys Lys Arg Arg Pro Ser Arg Ser Arg Ala Val  
85 90 95

Ser Arg Gly Ala Lys Thr Ala Glu Thr Val Gln Arg Ile Lys Lys Thr  
100 105 110

Arg Arg Leu Lys Ala Asn Asn Arg Glu Arg Asn Arg Met His Asn Leu  
115 120 125

Asn Ala Ala Leu Asp Ala Leu Arg Glu Val Leu Pro Thr Phe Pro Glu  
130 135 140

Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala His Asn Tyr  
145 150 155 160

Ile Trp Ala Leu Thr Glu Thr Leu Arg Leu Ala Asp His Cys Ala Gly  
165 170 175

Ala Gly Gly Leu Gln Gly Ala Leu Phe Thr Glu Ala Val Leu Leu Ser  
180 185 190

Pro Gly Ala Ala Leu Gly Ala Ser Gly Asp Ser Pro Ser Pro Pro Ser  
195 200 205

Ser Trp Ser Cys Thr Asn Ser Pro Ala Ser Ser Ser Asn Ser Thr Ser  
210 215 220

Pro Tyr Ser Cys Thr Leu Ser Pro Ala Ser Pro Gly Ser Asp Val Asp  
225 230 235 240

Tyr Trp Gln Pro Pro Pro Pro Glu Lys His Arg Tyr Ala Pro His Leu  
245 250 255

Pro Leu Ala Arg Asp Cys Ile  
260